Glass Mountain Exploration
Environmental Assessment/Initial Study
CPN Telephone Flat, Inc.
Siskiyou County, California

DRAFT

MAY 2002

Prepared for:

Siskiyou County APCD
BLM
Klamath National Forest
Modoc National Forest

Prepared by:

MHA Environmental Consulting, Inc.
4 West Fourth Avenue, Suite 303
San Mateo, CA 94402

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Glossary of Acronyms

ACRONYM	DEFINITION
AADT	Annual Average Daily Traffic
AAQS	Ambient Air Quality Standard
ADT	Average Daily Traffic
AIRFA	American Indian Religious Freedom Act
AMA	Adaptive Management Area
APCD	Air Pollution Control District
ATC	Authority to Construct
BACT	Best Available Control Technology
BEMA	Bald Eagle Management Area
bgs	Below Ground Surface
BLM	US Department of the Interior, Bureau of Land Management
BMP	Best Management Practices
BOPE	Blow-Out Prevention Equipment
BPA	Bonneville Power Administration
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
Calpine	Calpine Corporation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDF	California Division of Forestry
CDFG	California Department of Fish and Game
CEGC	California Energy General Corporation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cm/sec	Centimeter per Second
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society

CO	Carbon Monoxide
CPN	CPN Telephone Flat Inc.
CVRWQCB	Central Valley Regional Water Quality Control Board
CWHR	California Wildlife Habitat Relationships System
d/d	Dead and Downed
dB	Decibel
dBA	Decibels on the A-weighted Scale
dbH	Diameter at Breast Height
DOE	Determination of Eligibility
DOT, Caltrans	Department of Transportation
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
°F	Degrees Fahrenheit
FEIS	Final Environmental Impact Statement
FESA	Federal Endangered Species Act
FMRP	Freeport-McMoRan Resource Partners
FONSI	Finding of No Significant Impact
FS	Forest Route
FWARG	Far Western Anthropological Research Group, Inc.
GDP	Geothermal Drilling Permit
GHC	Good Hiding Cover
GMP	General Management Plan
GRO	Geothermal Resource Operational Orders
H_2S	Hydrogen Sulfide
HCA	Habitat Conservation Area
HPMP	Historic Properties Management Program
Hz	Hertz
IBLA	Interior Board of Land Appeals
ID	Inside Diameter
IP	Interested Parties

IS	Initial Study
KGRA	Known Geothermal Resource Area
KNF	Klamath National Forest
KOP	Key Observation Point
LCM	Lost Circulation Material
MF	Marginally Suitable for Foraging
MIS	Management Indicator Species
MMRP	Mitigation Monitoring and Reporting Program mph Miles Per Hour
MNF	Modoc National Forest
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
Mph	Miles Per Hour
MR	Marginally Suitable for Reproduction
MSLA	Managed Late-Successional Area
MTC	Marginally Suitable for Thermal Cover
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Council
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
No.	Number
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
NPAB	Northeast Plateau Air Basin
NPS	National Park Service
NRHP	National Register of Historic Places
NSO	Northern Spotted Owl
NSR	New Source Review
NTL	Notice to Lessees
NWFP	Northwest Forest Plan
O_3	Ozone

OD	Outside Diameter
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
PAI	Potentially Affected Individuals
Pb	Lead
$PM_{2.5}$	Particulate Matter less than 2.5 Microns
PM_{IO}	Particulate Matter Less Than 10 Microns
POE	Plan of Exploration
POO	Plan of Operation
POU	Plan of Utilization
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration
psi	Pounds per Square Inch
PTO	Permit to Operate
PFR	Primary Forest Route
RCRA	Resource Conservation and Recovery Act
RMA	Recreation Management Area
ROD	Record of Decision
ROG	reactive organic gases
ROS	Recreation Opportunity Spectrum
RRA	Roadless Release Area
RV	Recreational Vehicle
SA	Species Associations
SCAPCD	Siskiyou County Air Pollution Control District
SF	Suitable for Foraging
SHPO	State Historic Preservation Office
SIA	Special Interest Area
SO_2	Sulfur Dioxide
SPL	Sound Pressure Levels
SR	Suitable for Reproduction
STC	Suitable for Thermal Cover
TCH	Temperature Core Hole

TCP	Traditional Cultural Property
TGH	Temperature Gradient Hole
TSP	Total Suspended Particulates
USFS	US Department of Agriculture, Forest Service
USFWS	US Fish and Wildlife Service
USGS	US Department of the Interior, Geological Survey
VQO	Visual Quality Objective
WDR	Waste Discharge Requirement
WSR	Wild and Scenic River

1: INTRODUCTION

1.1 Project Overview

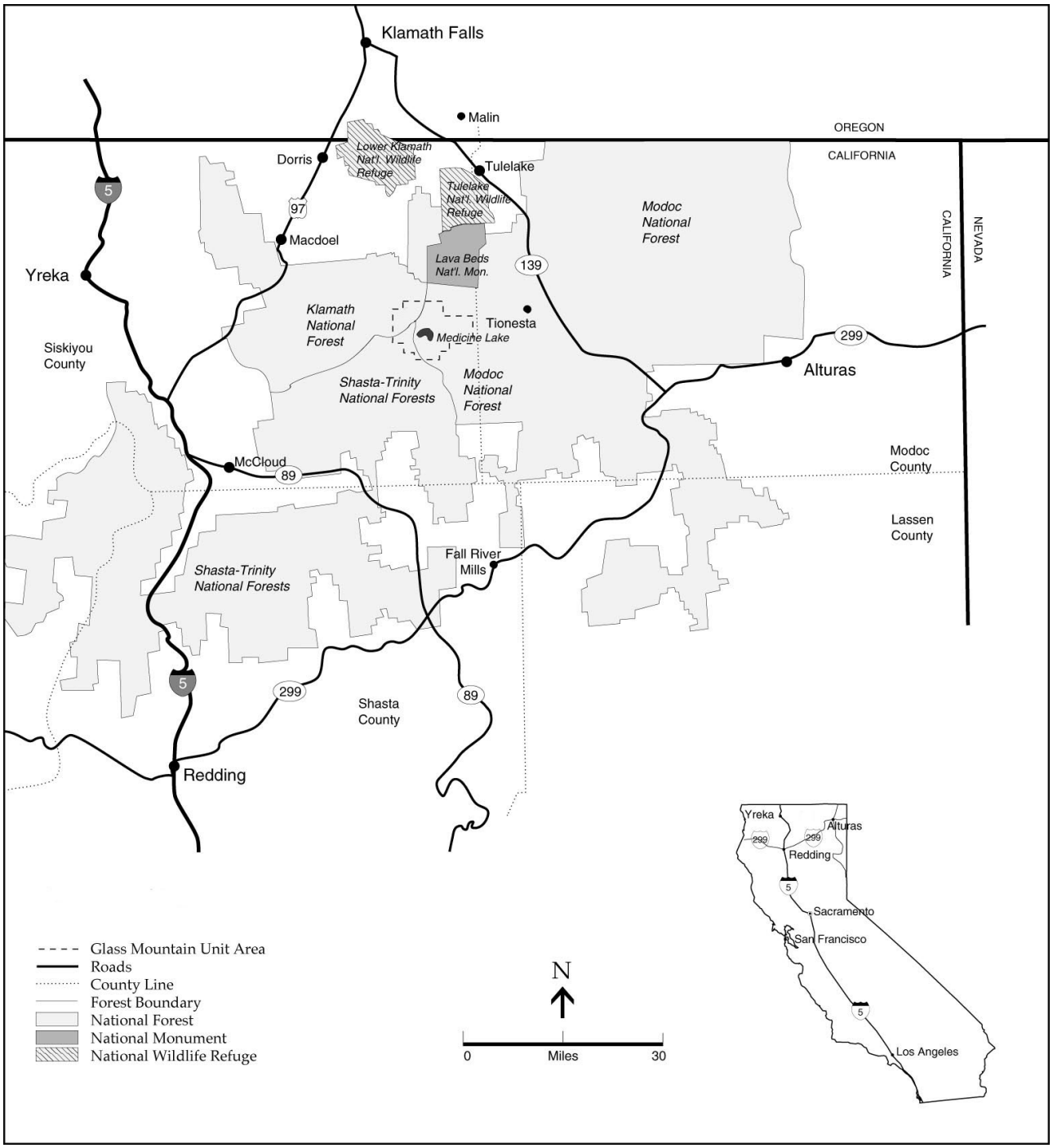
Calpine Corporation (Calpine) and CPN Telephone Flat Inc. (CPN)[1] propose to implement a Plan of Operation for exploratory drilling and flow testing in the Klamath National Forest and Modoc National Forest in Siskiyou County, California (Figure 1.1-1). Drilling would occur within the Glass Mountain Known Geothermal Resource Area (KGRA). The proposed action would occur on Federal lands leased by the U.S. Bureau of Land Management (BLM) to Calpine and CPN for exploration, development, production, and utilization of geothermal resources. CPN is the unit operator of the Glass Mountain Federal Unit (Unit) for the proposed project action.

The proposed project would include construction of two new well pads, for the drilling, completion, and flow testing of two deep (production size) exploration wells and the drilling of a Temperature Gradient Hole (TGH) on one of these well pads. The proposed action would also include testing of three existing exploration wells located within the Unit. The proposed activities are scheduled to begin in the summer of 2002. The designations for each of the well sites are shown in Table 1.1-1. The proposed project sites are shown in Figure 1.1-2.

The exploration wells would be drilled to an approximate depth of 9, 000 feet and flow tested for up to 30 days. Prior to drilling an exploration well at the 64-27 site, CPN proposes to first drill a TGH to evaluate the extent and quality of the thermal resource. The TGH would be drilled to a depth of 6,000 feet, or 500°F, whichever comes first.

[1] Calpine Corporation purchased California Energy General Corporation (CEGC) and changed the CEGC name to CPN Telephone Flat, Inc.

Figure 1.1-1: Regional Location Map



SOURCE: BLM et al 1998

Table 1.1-1: Proposed Exploration Well Pad Designations

Well Pad Site	Lease	National Forest/ Location	Proposed Action
64-27	CA-1230	Klamath National Forest/NE 1/4 Sec 27 T44N, R3E	Construct a New Well Pad, Drill a Temperature Gradient Hole (TGH)
64-27	CA-1230	Klamath National Forest/NE 1/4 Sec 27 T44N, R3E	Expand Well Pad, Drill a Deep Well (in addition to the TGH), Flow Test
85-33	CA-6111	Klamath National Forest/SE 1/4, Sec 33 T44N, R3E	Enlarge an existing TGH location, Drill a Deep Well, Flow Test
68-8 (existing well)	CA-12372	Modoc National Forest/SE 1/4, Sec 8 T43N, R3E	Existing Well Pad and Deep Well, Flow Test
31-17 (existing well)	CA-12372	Modoc National Forest/NW 1/4, Sec 17 T43N, R4E	Existing Well Pad and Deep Well, Flow Test
87-13 (existing well)	CA-12371	Modoc National Forest/SE 1/4, Sec 13 T43N, R3E	Existing Well Pad and Deep Well, Flow Test

SOURCE: Calpine 2002

1.2 Purpose and Need

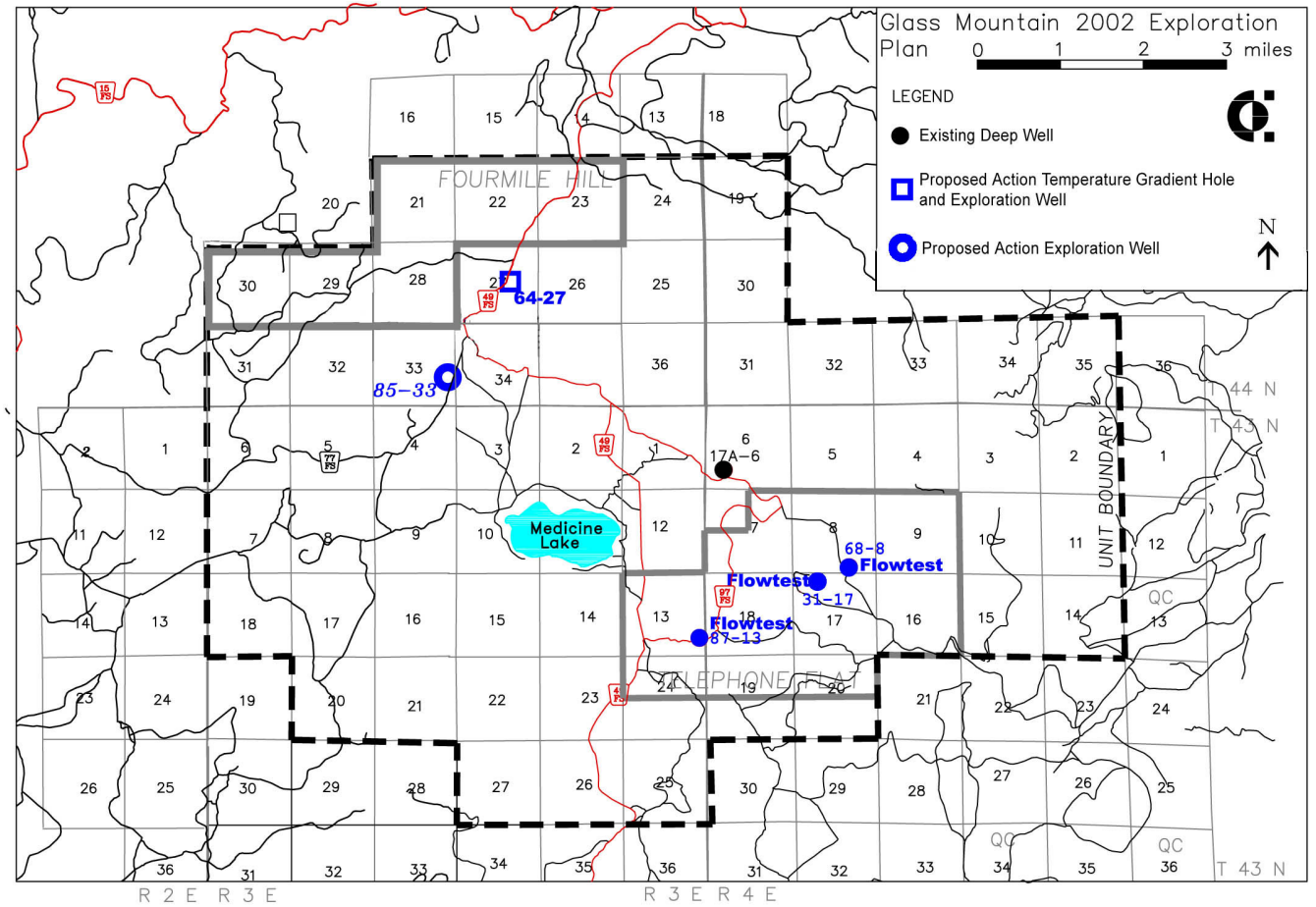
PURPOSE

The purpose of the proposed action is to identify and define the boundaries of a commercially viable geothermal resource through drilling to specific geologic drilling targets. Based on existing well data, surface geology, and geophysical surveys, Calpine and CPN believe geothermal resources exist in the KGRA. The purpose of the drilling is to identify additional reservoir volume. The purpose of the flow testing of the existing wells is to identify the reservoir characteristics and the capacity of the reservoir. Drilling and flow testing of new and existing deep wells would provide further information about the extent and production capacity of the geothermal resource in each of the project areas.

NEED

Recent events in electricity demand indicate the need for additional power. Although conservation is cited as a source of additional power to meet this need, conservation alone is not expected to meet all of the demand. Renewable energy sources, such as geothermal energy, already supply a significant amount of electricity to the western grid, with 2800 MW of geothermal installed in California, Nevada, Utah, and Hawaii. Existing and improved technology for geothermal utilization will allow a broadening use of this resource. The National Energy Policy calls for increased domestic energy production, including the use of renewable energy. The Federal government's position on geothermal power is that it will add sustainable economic development, create jobs, and support cleaner local and regional environments (Geo Powering the West 2000). Similar legislation

Figure 1.1-2: Proposed Project Sites



SOURCE: CPN Telephone Flat, Inc. 2002

has been introduced in the state of California in order to promote the use and development of renewable energy. The need for the proposed action has been established by the U.S. Congress in the Geothermal Steam Act of 1970 and by the California legislature in the Warren-Alquist Act of 1974, both of which encouraged geothermal development as a means to diversify energy supplies. In addition, the Federal Geothermal Leases issued by the BLM require diligent exploration. Other acts (including the Federal Land Policy and Management Act of 1976, the Public Utility Regulatory Policies Act of 1978, and the National Materials and Minerals Policy, Research, and Development Act of 1980) also identify the need to develop alternate energy resources.

1.3 Agency Roles

The proposed project includes activities at both new and existing well pads. The need for approval varies at the different sites. For example, the flow test activities at wells 68-8, 31-17, and 87-13 have already been authorized by the BLM and USFS. No new authorization for these pads is required from the BLM or USFS.

The Siskiyou County APCD originally issued ATC permits for well sites 68-8, and 87-13 in 1984. An ATC permit was issued for well site 31-17 on May 23, 1988.These permits expired in approximately 1992. The APCD must therefore consider the environmental effects of issuing new permits for these existing wells.

The description of agency roles below provides specific information on the decisions that must be made by each agency.

BUREAU OF LAND MANAGEMENT

The Geothermal Steam Act of 1970 gives the BLM the authority to issue leases for and make determinations on all geothermal activities to be conducted on Federal lands, including National Forest lands. The BLM is the lead Federal agency for the proposed action.

CPN has submitted the POO to the Alturas Field Office of the BLM for review and approval. The BLM is responsible for conducting an environmental review of the proposed project pursuant to the National Environmental Policy Act (NEPA) and for approving, approving with modifications, or denying the proposed POO.

Under NEPA, the BLM must consider the effects of constructing well pads 64-27 and 85-33, and of drilling and testing wells at these pads. The BLM must issue a Geothermal Drilling Permit (GDP) before a proposed drilling action and a Sundry Notice before any surface disturbance. GDP's were issued for well site 68-8 on July 9, 1985, well site 31-17 on June 24, 1988, and well site 87-13 on September 14, 1989. The BLM and USFS approvals are still in affect (Wardlow 2002).

FOREST SERVICE

The proposed project is located on Klamath and Modoc National Forests. The U.S. Department of Agriculture, Forest Service (USFS) is the Surface Managing Agency for the proposed action. The BLM and Region V of the USFS have entered into a Memorandum of Understanding (MOU) for coordinating the processing of proposed geothermal pre-and post-lease actions on National Forests (BLM and USFS 1989). Before the BLM can authorize any proposed geothermal activities on National Forests, the BLM must consult

with the USFS. The USFS is responsible for identifying mitigation measures and making recommendations to the BLM for the proposed activities. The USFS is cooperating with the BLM and is overseeing the preparation of this environmental analysis.

The USFS will consider the environmental effects of the proposed project, including the construction of the new well pads, and the drilling and testing of the new wells. The Klamath National Forest (KNF) and Modoc National Forest (MNF) will issue permits to CPN for off-lease activities such as special use permits.

SISKIYOU COUNTY AIR POLLUTION CONTROL DISTRICT

Implementation of the POO would require that Calpine obtain permits from the local air district. The proposed project would include the emission of geothermal steam to the atmosphere during drilling and testing; therefore, the Siskiyou County Air Pollution Control District (SCAPCD) would have the authority to issue an Authority to Construct (ATC) permit for the proposed action, should they desire to do so (District Rule 2.2).

The SCAPCD is the state lead agency under the California Environmental Quality Act (CEQA), and is responsible for analyzing the environmental effects of the proposed action in compliance with CEQA. The analysis under CEQA will address the whole of the proposed project, including pad construction, well drilling, and well testing.

Deep exploration well drilling equipment proposed for use by Calpine/CPN is currently permitted by CARB under the portable equipment registration program. An Authority to Construct (ATC) permit would not be required from the SCAPCD for the drilling rig.

The proposed TGH drilling at 64-27 would require an ATC for the drilling rig because the engines did not qualify for the California Air Resources Board (CARB) program. However, the emissions from these engines do not trigger New Source Review and could be exempt from permitting (District Rule 2.2).

REGIONAL WATER QUALITY CONTROL BOARD

The Central Valley Regional Water Quality Control Board (CVRWQCB) has jurisdiction over waste discharge to land and is responsible for issuing permits for discharging fluids to well pad sumps and injection of geothermal fluids in the project area. Well sites 64-27 and 85-33 are in the North Coast Regional Water Quality Control Board; however, CVRWQCB orders cover these sections of the KGRA.

The CVRWQCB issued a Wastewater Discharge Order No. 95-199 for the Unit, which is included in Appendix A.

NEPA/CEQA

The proposed action would require discretionary approvals from both Federal and local agencies. The proposed action is therefore subject to environmental review pursuant to both NEPA and CEQA. This document has been prepared as both an Environmental Assessment (EA) in order to meet requirements of NEPA, and as an Initial Study (IS) under CEQA. This document has been prepared by a third-party consultant and distributed to the public (Appendix B) under the direction of the lead and surface managing agencies, in accordance with CEQA, and USFS and BLM NEPA guidelines.

REQUIRED PERMITS

Table 1.3-1 lists the decisions or permits that must be issued by each agency.

Table 1.3-1: Required Permits and Approvals

Well Site/ Lease Number	Project Action	Permits Issued	Permits Needed
64-27/CA1230	Construct well pad (~75 x ~150 Ft), drill Temperature Gradient Hole	CVRWQCB-Waste Discharge	SCAPCD-ATC, KNF- Special Use Permit, BLM-NOI, Sundry Notice
64-27/CA 1230	Expand well pad to ~3 acres (~360 x ~360 Ft), drill deep exploration well, flow test	CVRWQCB-Waste Discharge	SCAPCD-ATC, KNF-Special Use Permit, BLM-GDP, Sundry Notice
85-33/ CA 6111	Expand well pad to ~3 acres (~360 x ~360 Feet), drill deep exploration well, flow test	CVRWQCB-Waste Discharge	SCAPCD-ATC, KNF-Special Use Permit, BLM-GDP, Sundry Notice
68-8/ CA 12372 (Existing well)	Flow test well, inject fluids	CVRWQCB-Waste Discharge, BLM-GDP	SCAPCD-ATC, MNF-Special Use Permit, BLM- Sundry Notice,
31-17/ CA 12372 (Existing well)	Flow test well, inject fluids	CVRWQCB-Waste Discharge, BLM-GDP	SCAPCD-ATC, MNF-Special Use Permit, BLM-Sundry Notice
87-13/ CA 12371 (Existing well)	Flow test well, inject fluids	CVRWQCB-Waste Discharge, BLM-GDP	SCAPCD-ATC, MNF-Special Use Permit, BLM-Sundry Notice
Water Pipelines (See table 1.3-2)	Flow test, inject fluids, fresh water line		KNF-Special Use Permit, Casual Use Permit; MNF-Special Use Permit, Casual Use Permit; BLM-Sundry Notice

Notes:
ATC=Authority to Construct
CVRWQCB=Central Valley Regional Water Quality Control Board
GDP=Geothermal Drilling Permit
KNF=Klamath National Forest
MNF=Modoc National Forest

SOURCE: MHA 2002

Pipeline Route Permits

The water pipeline routes for the proposed action would travel through eleven BLM Lease areas. All of the eleven leases have been unsuspended. Table 1.3-2 lists the eleven lease areas that the pipeline will travel through and which forest the section is located in.

Table 1.3-2: Water Pipeline Route

Leases	Section	USFS
21926	28	K
39724	27	K
1230	27	K & M
1036	34, 35	K & M
6111	33	K
12369	2	M
39729	1	M
39729	6	M
12370	7,12	M
12372	8,17	M
12371	13,18	M

K – Klamath National Forest
M – Modoc National Forest
If No – BLM will approve a Sundry Notice for the water pipeline

SOURCE: Calpine 2002

1.4 Project History

PREVIOUS GEOTHERMAL ACTIVITIES

The proposed action is located within the Glass Mountain Federal Geothermal Unit originally designated in the Unit Agreement for the Glass Mountain KGRA that was approved by the BLM in 1982. Unit Agreements provide for a cooperative plan among responsible agencies and geothermal exploration companies to explore and potentially develop a geothermal resource.

Lessees

At the time the Unit Agreement was approved, Unocal was designated as the Unit Operator. Other major leaseholders in the Unit Area were Occidental Geothermal, Inc. (Oxy) and Phillips Petroleum Company (Phillips).

Subsequent to approval of the Unit Agreement in 1982, there have been several changes in the geothermal exploration companies interested in exploring the geothermal resource within the Unit. By 1988, the primary leaseholders within the Unit Area were Unocal and

Freeport-McMoRan Resource Partners (FMRP). In 1993, the California Energy General Corporation (CEGC) acquired the Unocal leases within the Unit Area and was designated as the Unit Operator. In 1994, Calpine purchased FMRP's leases. In October 2001, Calpine bought CEGC thus acquiring the leases, wells, and Unit Operator position held by CEGC. In March 2002 Calpine renamed the CEGC to CPN Telephone Flat, Inc (CPN). CPN is the unit operator and will implement this proposed project.

PREVIOUS ENVIRONMENTAL DOCUMENTATION

Extensive investigations and geophysical surveys of the geothermal resource have been conducted within the KGRA since the KGRA was leased in 1981. A total of 24 temperature gradient holes (TGH) were drilled in or adjacent to the KGRA between 1981 and 1984. A TGH is drilled to gather subsurface temperature information that will be used along with geologic information to determine the most likely areas for geothermal energy production. These holes were drilled by Unocal, Phillips, and Oxy, and were used to measure the temperature gradient in the KGRA.

Copies of previous environmental documents for these geothermal activities (including EA/IS and EIS/EIR documents) in the project area can be found at the following locations (note that in some cases TGH's may be referred to by synonymous terms such as "temperature corehole", "gradient hole", or stratigraphic test"):

- Klamath National Forest Supervisor's office in Yreka, CA
- Goosenest Ranger District office in Macdoel, CA
- Bureau of Land Management office in Alturas, CA
- Siskiyou County Air Pollution Control District office in Yreka, CA

Previous documentation is described below.

Exploration Activities

In 1981, the BLM proposed issuance of several geothermal leases within the Glass Mountain KGRA for the purpose of exploring, developing, and utilizing the geothermal resource within the KGRA. As part of the authorization process for this leasing, the BLM and the USFS jointly prepared and issued an EA for the "casual use and exploration" of the geothermal resource within the KGRA (BLM and USFS 1981). In 1984, the EA was supplemented to analyze additional potential geothermal leases from expansion of the KGRA and to address the potential environmental effects associated with exploration, development, production, and utilization of the geothermal resource (BLM and USFS 1984). The leases that were issued explicitly provide for the exploration, development, production, and utilization of the leases. The leases upon which the proposed action is located on also carry special stipulations that CPN must comply with prior to implementation of any proposed POO.

Based on the results of temperature gradient drilling, drilling of deep exploration test wells was initiated in 1984 when Phillips and Oxy drilled a deep exploration test well at well pad 17A-6. Deep exploration test wells are wells that are drilled to a specific depth to find or test the capability of a geothermal reservoir to produce fluids, and if successful, to produce fluids that could eventually supply a power plant. Unocal drilled three additional deep exploration wells between 1985 and 1991 (well 68-8 was drilled in 1985 and

deepened in 1988, well 31-17 was drilled in 1988, and well 87-13 was drilled in 1989 and deepened in 1991).

In the Fourmile Hill Geothermal Exploration Project, Calpine proposed to implement exploration activities within the KGRA described in a Plan of Operations (POO) submitted by Calpine to the BLM in 1995 (BLM et al 1998). An EA/Initial Study (IS) was prepared for the Fourmile Hill Geothermal Exploration Project (BLM et al 1995a). On the basis of the EA/IS, the lead agencies determined that Calpine's exploration project would not result in a significant effect on the environment with implementation of identified mitigation measures. The project was approved by the federal agencies in April 1996. A Mitigated Negative Declaration was adopted by the SCAPCD in July 1999 (SCAPCD Resolution No. 99-227). Subsequently, approval of the Authority to Construct/Permits to Operate by the SCAPCD was given in September 1999 (SCAPCD Statement of Decision No. 99-04). The SCAPCD Hearing Board subsequently ratified this decision on May 18, 2000 (SCAPCD Statement of Decision No. 00-07). Calpine has initiated the exploration activities authorized through this Plan.

In 1995, the BLM prepared an EA/IS for the Glass Mountain Unit Geothermal Exploration Project proposed by CEGC to implement a Plan of Operation (POO) for exploratory geothermal drilling within the Glass Mountain KGRA on the Modoc and Shasta-Trinity National Forests. A Negative Declaration was prepared for the project pursuant to CEQA requirements and a Finding of No Significant Impact (FONSI) was prepared pursuant to NEPA requirements. The approved POO allowed drilling of up to five exploratory geothermal temperature core holes (TCHs) and the drilling, completion, and testing of deep exploration wells at five well pads within the Unit.

In April 2001, Calpine proposed deepening existing temperature gradient hole 88-28. The Siskiyou County APCD prepared an Initial Study and issued a Mitigated Negative Declaration that addressed the environmental effects of the Calpine Fourmile Hill Temperature Gradient Core Hole Deepening Project. The APCD adopted the final Mitigated Negative Declaration pursuant to Resolution No. 01-03. A permit for the TGH drilling project was issued on June 20, 2001 under Statement of Decision No. 01-02. The final permit was adopted following an appeal to the SCAPCD Hearing on July 31, 2001 (Statement of Decision No. 01-03).

Development Activities

Fourmile Hill. In 1998, Calpine proposed to develop a 49.9-megawatt geothermal power plant and well field in the Fourmile Hill Project Area, and a 24-mile, 230-kilovolt-transmission line from Fourmile Hill to Malin. In September 1998, a joint Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (State Clearinghouse #96062042) was prepared to analyze the environmental effects of the Calpine Fourmile Hill development project (BLM et al 1998). The BLM and USFS served as lead federal agencies. Bonneville Power Administration was a cooperating agency for the joint EIS/EIR. The SCAPCD served as the state lead in the preparation of the joint EIS/EIR. The joint document was prepared pursuant to the requirements of NEPA and CEQA. An alternative to the project was approved through a federal Record of Decision; the alternative was related to the routing of the transmission line. State agency approvals included certification of the Fourmile Hill Geothermal Development EIR by the Siskiyou County Air Pollution Control Officer (APCO) in December 1999(see Statement of Decision No. 99-05). The Save Medicine Lake Coalition, the Pit River Tribe, and the Native

Coalition appealed the certification of the EIR. The District Board of Directors denied the appeal on April 18, 2000 pursuant to Resolution No. AP-00-01.

Permits for approving the Development Project, including development wells and the power plant, were issued by the APCO on March 31, 2000 (See Statement of Decision Nos. 00-02 and 00-03.) Appeals of these permits were filed by the Save Medicine Lake Coalition, and were subsequently denied by the District Hearing Board on May 18, 2000 (see Statement of Decision Nos. 00-05 and 00-06.) Calpine has not initiated the proposed development.

The Save Medicine Lake Coalition filed two separate lawsuits in Siskiyou County Superior Court, claiming, among other things, inadequacies in the District's EIR for the Fourmile Hill Geothermal Development Project and permit approval processes. In addition, the Pit River Tribe and Native Coalition, alleging inadequacies in the EIR and CEQA review process, initiated a separate lawsuit. The Pit River litigation has since been dismissed in its entirety by the Superior Court. The Save the Medicine Lake Coalition lawsuits were also dismissed by the Superior Court; however, they were appealed by the petitioners and subsequently consolidated before the Court of Appeal. The consolidated appeal currently is pending.

The project opponents also appealed the May 31, 2000 federal Record of Decision (ROD). On August 23, 2000 the Interior Board of Land Appeals (IBLA) issued a stay from the decision in the ROD. On February 7, 2002, the IBLA ruled to deny all appeals and lifted the stay, thereby allowing the Fourmile Hill project to proceed.

Telephone Flat. In July 1996, CalEnergy Company, Inc. submitted a Plan of Utilization (POU) to the BLM for the proposed Telephone Flat Geothermal Development Project on the Modoc National Forest in Siskiyou County (BLM et al 1999). A Draft EIS/EIR for the geothermal development project was released in May 1998 and the Final EIS/EIR was published in February 1999. The Telephone Flat geothermal project described in the Final EIS/EIR consisted of constructing, operating, and maintaining a 48-megawatt geothermal power plant, with associated geothermal production and injection wells, well pads, roads, interconnected geothermal fluid pipelines, and an accompanying 3-mile 230-kilovolt transmission line. The proposed power plant area for the Telephone Flat project is about 4.5 miles southeast of the proposed Fourmile Hill geothermal power plant site. The project was denied by both the Bureau of Land Management and US Forest Service on May 31, 2000 due to potential impacts to Native American use of the area, and to recreational users, which could not be mitigated.

The Federal lead agencies chose the no action alternative in the Federal Record of Decision. CalEnergy did not present the EIR to the SCAPCD for approval; however, in a letter dated, April 17, 2002, CPN requested the SCAPCD to certify the EIR.

On April 4, 2002, the United States Department of Justice and California Energy General Corporation (CEGC), a subsidiary of Calpine Corporation, reached an agreement to resolve breach of contract and takings litigation concerning the denial of the Telephone Flat Geothermal Development Project near Medicine Lake on the Modoc National Forest. As part of the settlement agreement, the BLM and US Forest Service will reconsider the May 2000 Record of Decision which denied the project. In turn, CEGC will suspend litigation against the United States until the reconsideration is complete. The reconsideration will take into account the President's National Energy Policy and other

changes in the renewable energy field, which have occurred since the May 2000 decision. The settlement directs both BLM and the US Forest Service to complete the reconsideration process by November 2002.

Resource Documents

Klamath Forest Plan. In 1995, the USFS prepared a Land and Resource Management Plan for the Klamath National Forest (USFS 1995) and a supporting Final EIS (USFS 1995a). The management plan acts as a tool to guide the agencies on managing activities within the Klamath National Forest. Sections of the plan were updated in September of 2001 (USFS 2001). The Final EIS acknowledges that approximately 13,400 acres of the KGRA have been leased for geothermal resource development, and that some portion of these lands will likely be utilized when development of the geothermal resource begins within the KGRA.

The Klamath LRMP established forest-wide direction and more focused Management Area direction. Forest-wide direction is found on pages 4-3 through 4-72 of the Forest Plan. The Glass Mountain EA project area is within the Goosenest Management Area, which has distinct management direction[s], including goals, desired conditions, and standards and guidelines.

Goosenest Adaptive Management Area. Adaptive Management Areas (AMAs) are landscape units designated to encourage the development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives. In 1996, the Klamath National Forest performed an Ecosystem Analysis of the Goosenest AMA (USFS 1996) as part of the LRMP implementation analysis. The Goosenest AMA Ecosystem Analysis is based on the plans and policies of the Klamath National Forest LRMP and does not contain any additional plans or policies applicable to the proposed project beyond what is already in the Klamath LRMP. The portion of the project in the Klamath National Forest is in the eastern end of the Goosenest AMA.

Modoc Forest Plan. In 1991, the USFS prepared a Land and Resource Management Plan for the Modoc National Forest (USFS 1991). This Management Plan provides guidance on natural resource management activities and establishes management standards and guidelines for the Modoc National Forest. As part of the environmental review process for the Management Plan, the USFS prepared a Final Environmental Impact Statement (FEIS) that discusses the environmental consequences of the plan and acknowledges the potential for geothermal development on the Forest (USFS 1991b).

The Modoc LRMP established forest-wide direction and more focused management area direction. Forest-wide direction is found on pages 4-1 through 4-149 of the Forest Plan. The Glass Mountain EA project area is within the Doublehead Ranger District Management Area, which contains specific management direction, standards, and guidelines.

Northwest Forest Plan. The Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (NSO) (also known as the Northwest Forest Plan or the President Plan; USFS and BLM 1994) and the accompanying EIS were adopted by the USFS and BLM in 1994. The intent of this plan is to protect and enhance old growth and late-successional forest ecosystems in Washington, Oregon, and northern California. The

Northwest Forest Plan (NWFP) is primarily focused on managing timber harvest programs.

The Record of Decision for the NWFP officially amended all approved LRMPs for National Forests located within the range of the northern spotted owl to ensure consistency between plans. The Modoc National Forest LRMP was adopted in 1991 and amended by the NWFP. The Klamath National Forest LRMP was approved subsequent to the adoption of the Northwest Forest Plan, and the management policies of the NWFP have been incorporated into the Klamath National Forest LRMP.

The NWFP also outlines specific management standards and guidelines for each land category. Riparian Reserves occur within other land management areas, such as Managed-Late Successional Areas or Matrix. The NWFP identifies additional standards and guidelines that apply to Riparian Reserves areas.

Memorandum of Agreement among the U.S. Department of Agriculture, Forest Service, U.S. Department of the Interior, Bureau of Land Management, California State Historic Preservation Officer and the Advisory Council on Historic Preservation regarding the Fourmile Hill Geothermal Development Project. In January 2000, a Programmatic Agreement was signed by the USFS, BLM, SHPO, and the Advisory Council on Historic Preservation and included stipulations applicable to cultural resources in the Fourmile and Telephone Flat project areas. The USFS prepared a Determination of Eligibility (DOE) for the National Register of Historic Places (NRHP) for two areas in relation to the proposed geothermal development in the Medicine Lake Highlands. A Historic Properties Management Plan is in the process of being prepared for the 29 Traditional Cultural Properties (TCPs) identified in the Assessment of Effects completed for the Fourmile Hill and Telephone Flat projects.

Information from the following documents are incorporated into this document:

- Fourmile Hill Geothermal Development Project Final EIS/EIR (Siskiyou County APCD, BLM, USFS and BPA 1998)
- Telephone Flat Geothermal Development Project Final EIS/EIR (Siskiyou County APCD, BLM, USFS and BPA 1999)
- Glass Mountain Unit Geothermal Exploration Project EA/IS (Siskiyou County APCD, BLM, and USFS 1995)
- Programmatic Agreement for the Fourmile Hill Geothermal Development Project (USFS and BLM 2000)

1.5 Lease Stipulations

The environmental assessment prepared for geothermal leasing in the Glass Mountain KGRA recommended, and the action approved by the agencies included special stipulations, to be applied to certain areas when geothermal leases were issued. Lease stipulations are prescribed to individual leases when issued. The geothermal leases (CA1036, CA1230, CA6111, CA12369, CA12370, CA 12372, CA 12371, CA21926, CA39724, and CA39729) comprising the proposed project action were issued over the period of 1981-1988 with special stipulations relevant to environmental resources within the lease areas. The lease stipulations for the proposed action are included in Appendix C and are described in detail in the land use section of this document (section 3.9).

1.6 Public Notice/ Consultation

The Forest Service has published information about this project in two mailings to interested parties requesting information about activities in the forest. This document is being distributed to agencies and others who have expressed interest in geothermal activities.

On May 7, 2002 Calpine met with the Klamath Tribes' tribal council, in their offices in Chiloquin, Oregon to discuss proposed activities this summer and the provisions of Calpine's past agreement with the Tribes. On May 11, 2002 Calpine met with the Shasta Tribe's council at a home near Ft. Jones, California to discuss the same issues that were discussed with the Klamath Tribes.

It was agreed that the tribes would nominate representatives to be included on the archaeological monitoring crew to monitor well pad construction activities this year. Additionally, Calpine will use instructors from the tribes to conduct cultural sensitivity and heritage classes for supervisors and workers on site.

Calpine is in the process of setting up the cultural monitoring program, which will be in place when work begins on the ground. There will be monitors, which Calpine will compensate, from both the Klamath and Shasta tribes. Calpine is making arrangements for an instructor from the Klamath Tribes to hold a full day cultural sensitivity and heritage class for about 20 Calpine employees, who will be working in the area this summer.

Calpine is making efforts to contact officers of the Pit River Tribe regarding archaeological monitors.